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PROGRESS CITED IN FORMULATION OF CEMA STANDARDS

East Berlin HORIZONT in German Vol 13 No 36, 1980 signed to press 1 Sep 80 p 22

[Article by Dr Horst Echter: "Unification of Standards in CEMA"]

[Text] The idea of formulating and applying certain technical solutions in a uniform manner is not at all as new as may be assumed. Almost 3,000 years ago, Mesopotamia--which was famous for its ceramic technology--was already building impressive water mains that were put together from clay pipes of equal dimensions. In this manner it was possible to use the advantages of division of labor and simultaneously produce in several workshops the necessary building parts in such a way that they would fit together. Over the centuries, production methods, which at any given time reflected the more or less rapid increase in knowledge, finally led to the manufacturing methods used in modern times.

Historically, however, optimal prerequisites for division of labor in international relations have existed only for a short time in the CEMA area, because here socialist production conditions in operation are characterized by concurring basic interests. One of the most highly developed forms of international economic cooperation is the rapidly progressing specialization and cooperation of production in the CEMA area. Accordingly, each country--as a rule--specializes in supplying those products and also scientific-technical accomplishments for the production of which it possesses particularly good prerequisites (traditional experiences, research and production capacities, raw materials). This country ships to all other interested partner countries, and they, in turn, send other specialized goods from their own production.

Naturally, such a procedure of increasing labor productivity extraordinarily, is only possible when centrally manufactured products can readily be used in all participating economies. Consequently, connecting measurements, gauges and essential technical specifications of power aggregates (such as electric motors), for instance, must be manufactured in such a manner that they can be installed in products which are operated differently.

Since this ideal situation generally does not exist at the very beginning, all participants are forced to agree on a common denominator. The result is formulated in the form of uniform parameters, in standards. In short, they are special regulations for the best possible unification of many different quality specifications (standards of procedure) as well as terminology and symbols (communications standards). In other words, the same solutions will be applied to recurring problems. Although it may be expedient to establish standards for the lowest and highest conformity, standards must principally be approached with the goal of establishing the best solutions.

'RS'--Recommended Specifications

In the interest of eliminating problems in the use of exchanged products within the framework of foreign trade, in 1956 the first steps were already taken to unify the most important technical specifications. The instrument that was used for this purpose consisted of recommendations for standardizations, the so-called RS [CEMA recommended standards], that were prepared jointly by those CEMA countries that showed an interest at that time. In most cases, the agreed-upon specifications offered opportunities to the users to choose from a limited number of similar parameters those which were best suited for their economic requirements. In this manner, differently developed technical specifications which existed for historical reasons were limited to a small selection. It signified an enormous progress for joint economic relations. At any rate, between 1956 and 1978, approximately 4,500 "RS" were prepared and recommended by CEMA to be applied to international relations.

The "complex program for the continuing expansion and perfection of co-operation and development of socialist economic integration of CEMA member countries," which was adopted during the 25th CEMA Council meeting in July 1971, also led to the introduction of a period of development which resulted in a higher level of multilateral standardization.

CEMA Standard

In accordance with the resolutions that were adopted during the 28th CEMA Council meeting in June 1974, member nations began to prepare and use CEMA standards for their economic relations. Whereas in the past, individual countries chose a varying number of the "RS" (for instance, from the steps of specifications)--according to prevailing circumstances--and sometimes even deviated from the contents of "RS," they now pledged to use the jointly created CEMA standards in their original form, i.e. without any changes in the substance, in their international economic relations. Beyond that the same standards are also applied to the intrastate system of standards, in which case, however, slight variations from the original standard are possible.

While the 28th CEMA meeting was still in progress, the "Convention on the Application of CEMA Standards for Mutual Economic Aid" was signed by

government representatives from the People's Republic of Bulgaria, the Hungarian People's Republic, the GDR, the Republic of Cuba, the Mongolian People's Republic, the Polish People's Republic, the USSR and the CSSR. According to a specified modus, it went into effect on 27 March 1975, the 90th day following the deposition of the fifth ratification document. The convention is obligating participating countries to use the CEMA standards which were confirmed by them in the Council and to apply them unchanged to contractual relations of their economic organizations. According to generally accepted legal principles, international legal contracts are only binding for the states and not their legal subjects, the governments issued special directives obligating those plants that are charged with foreign trade projects to base their export and import contracts on the authorized CEMA standards.

Irregardless of the fact that not every member nation will establish and use all the standards prepared by CEMA but only those which are meaningful to its own internationally existing economic relations, there is an increasing acceptance of these standards, contributing to closer relations between cooperating economies.

Among those areas which are to be included in the standardization are the so-called cross-section areas. They do not only affect individual lines of business and therefore, as a rule, require the cooperation of all CEMA countries. Among them are environmental protection, health, work and fire protection, material handling, energy conservation, measurement systems and systems for the exchange of information, to name only the most important ones. Furthermore, to be included are uniform rules on the classification and labeling of products and construction documentations as well as generally effective regulations for producing drawings which are reflected in the "Uniform System of Projection and Construction Documentation" (ESKD).

The majority of specific projects for preparing CEMA standards affecting certain product groups are based on international plans for specialization and cooperation which, most of the time, are realized within the framework of bilateral interstate agreements.

As we have seen, the areas in which solutions to standardization problems have to be found, are extraordinarily spread apart. Consequently, it is even more understandable that the individual questions which are part of the specialization project require long-term planning. CEMA member nations do justice to this requirement by establishing the focal points of their cooperative projects according to agreed-upon plans and long-term targeted programs of cooperation. The projects, which at the beginning are only sketched in outlines, will later be formulated in accordance with agreed-upon bilateral interstate programs effective until 1990 and the main thrusts of cooperation that will result.

The "initial spark" for the actual standardization activity in CEMA are, for the time being, those international agreements that are almost

exclusively bilateral (multilateral settlements are providing the framework for bilateral agreements), of which the biggest number deals with specialization and cooperation in production, which form the basis for approximately four-fifth of all standardization topics.

Pursuing Trend of Development

The preparation of standards is scientific-technical work. A prerequisite is that all participants constantly are in reciprocal contact with one another during all the phases--beginning with the first draft until the completed CEMA standard. The best possible procedure for this cooperation was recorded by CEMA countries in a document. They are using this so-called standardized work method for the preparation of their standards. Measured by world standards--the time period for accomplishing this is relatively short: It takes only about 2 years. A few months must be added, since they will be needed to establish technological prerequisites in production necessary for compliance with the new standards.

Naturally, researchers all over the world will not be idle during this time. It is therefore important to recognize the trend of this development during the same month when the work for standardization begins, to keep a constant eye on it and incorporate into the standards those technical specifications which will do justice to future worldwide parameters or even outperform them. "Progressive standards," as we call them, that are created in such a manner, frequently contain variations of solutions, which step by step provide more sophisticated features that later on, during the course of application, permit a gradual adaptation to growing demands. In other words, all partner countries are uniformly using that step of specifications which at any given time reflects the most advanced stage of technical development. In contrast to the "RS," which gave partners a choice of several similar parameters, CEMA standards provide complete equality in substance and congruence and thus guarantee a complication-free use of products which are manufactured and reciprocally exchanged according to these standards.

Complicated problems of this nature can only be solved if we strive to keep up with the level that is developing worldwide which, in turn, is influenced immeasurably by CEMA member nations, due to their highly developed technologies. Among other things, socialist countries are therefore participating in the work of those international groups which are dealing with standardization, such as the International Standardization Organization (ISO) and the International Electrotechnical Commission (IEC).

Until the beginning of this year, approximately 2,400 CEMA standards were created or already existing "RS" were completely revised and changed to meet CEMA standards. All of them represent the highest level of the most recent scientific accomplishments.

In view of particularly close economic relations between the GDR and the USSR, in 1973--before the work on CEMA standards had even begun--both states concluded a governmental agreement on cooperation in the area of standardization. It was later on supplemented, among other things, by adding an ordinance for the implementation of the work on the unification of state standards in both countries.

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GERMAN DEMOCRATIC REPUBLIC

ENERGY SAVING METHODS REQUIRED IN BUILDING MATERIALS INDUSTRY

East Berlin PRESSE-INFORMATIONEN in German No 106, 5 Sep 80 p 2

Reduction of Energy Consumption

[Article by Guenter Oehlert, deputy minister for construction: "Building Materials Industry Collectives Reduce Energy Consumption"]

[Text] In the building materials industry, high temperature processes play an important part in the technologies. This is why this industry is one of the most energy intensive fields of the economy. Its specific energy consumption, with reference to the indices of industrial goods production, amounts to approximately four times the average value of other industrial sectors. Those employed in this sector are striving to make an effective contribution in support of the resolutions of the party of the working class and the Council of Ministers concerning rational energy utilization.

The calculation of the amount of energy used during the first half of 1980 shows that results have been achieved. Compared to the same period during the previous year, industrial goods production increased by 6.4 percent, while the consumption of energy sources increased by only 1.7 percent. This corresponds to an energy saving roughly equivalent to 230,000 tons of brown coal. It was achieved by reducing the specific energy consumption. Based on the average consumption for 1979, the Ruedersdorf and Karsdorf VEB Cement Works have made an especially large contribution toward reducing energy consumption per ton of cement clinker produced: 5 kilograms of hard coal, and--in the wet process--3.5 kilograms of powdered brown coal fuel, respectively. City gas consumption for the production of one ton of ceramic bathroom fixtures was reduced by 70 cubic meters. In addition, the building industry has been able to save roughly 70,000 tons of cement during the first half of this year. Also, fuel oil consumption was reduced, through substitutions, by 79,000 tons, i.e. 28 percent of the total volume.

More General Utilization of the Experience of the Best

These results were fostered through a wide exchange of information organized in September 1979 by the Ministry for Construction, with the cooperation of

scientists, energy specialists and directors of enterprises and combines of the building materials industry. This consultation was based on a critical analysis of the energy consumption in the production processes used in this field. The participants set for themselves the objective of gradually attaining, on a broader basis, the figures characteristics of the best enterprises. In their opinion, the way to achieve this is to purposefully reduce the losses occurring during combustive processes and, through a more thrifty use of energy-intensive building materials, to create conditions such that the specific energy use is reduced by 5 percent each year. In addition, they set themselves the task of investigating technologies and facilities with respect to their requirements concerning the type of fuel used, to achieve a larger use of domestic energy sources than until now.

The Institute for Building Materials of the GDR School of Architecture, and scientific and technical organizations of the combines undertook comparisons both between enterprises of this industrial branch and with international optimum values. Based on this and on on-site engineering studies, they determined concrete starting points for the rationalization. Their findings have been incorporated into the scientific and rationalization conception of the Ministry for Construction. It outlines its strategy for the continued development of energy management in enterprises over a rather long period of time.

Emphasis on Reducing Fuel Oil Consumption

Efforts have also been made to find effective short-term measures. For instance, at the Karsdorf VEB Cement Works, Branch 3, progressive conversion of the rotary kilns to natural gas in order to save fuel oil had been undertaken already in 1979. Together with machine manufacturers, they are investigating whether and how powdered brown coal fuel could be used for the dry-process roasting of cement clinker. This could yield important knowledge concerning a more rational use of the energy fund which is available to the cement industry.

With initiatives of this and other types, the workers of this industrial branch also compete in the field of a more rational energy utilization to fulfill the tasks set in the plan for this year. Other projects have been undertaken to achieve energy savings and the substitution of energy sources, and they are under realization these months. The main points are to complete the shift away from fuel oil in the Bernburg and Karsdorf cement works, and to convert the Hainichen, Narsdorf and Wefensleben tile factories to gas firing. The objective of these measures is to achieve a further 7,200 ton reduction in the monthly fuel oil consumption.

A detailed balance of the energy used shows that, in certain areas, the objectives have not yet been fully achieved. Thus, the present specific briquette utilization for the dry cement clinker roasting process is still too high to enable the consumption norm prescribed for this plan-year to

be complied with. This is why the pace must be stepped up during the coming months, and why the initiatives undertaken in many enterprises to accelerate progress in the rational utilization of energy must be placed on a broader base.

More Efficient Energy Use

East Berlin PRESSE-INFORMATIONEN in German No 106, 5 Sep 80 p 6

('Facts and Figures' report by Press Office, Chairman, GDR Council of Ministers: "For More Efficient Energy Utilization in the Building Materials Industry")

[Text] The Seventh Building Conference of the Central Committee of the SED and the Council of Ministers of the GDR called the reduction of specific energy consumption in the overall investment and building area a task of considerable economic importance. The building materials industry must make an important contribution in this respect because it is a large consumer of energy. In 1979, 5 kilograms of fuel oil and 6 kWh of power were necessary to produce a sack of cement, 350 grams of brown coal briquettes to produce one tile, and 15 cubic meters of town gas to produce a washbasin. All together, enterprises in this industrial sector consumed 104,750 terajoules of energy last year--an amount equivalent to 11.5 million tons of raw brown coal.

If we consider the total consumption of our centrally managed economy, the building materials industry accounted for 26 percent of the hard coal, 14 percent of the blast-furnace coke, and 10 percent of the fuel oil used. Energy consumption is especially high in cement works and in enterprises producing building and fine ceramics, because their production requires high temperature processing. For 1980, the building materials industry was given the task of saving 5 percent on commodity energy and 3 percent on electric power.

In compliance with the resolutions of the Eighth and Ninth SED Party Congresses, workers of the building materials industry have made considerable efforts, already in past years, to achieve a more rational use of energy. Thus, specific energy consumption could be reduced by 9.4 percent compared to the 1975 level. All together, as a result of the rationalization of energy utilization and energy transformation processes, roughly 6,285 terajoules were saved from 1977 to 1979, i.e. approximately 8 percent of the annual energy consumption of the centrally managed building materials industry.

To ensure, in the future, a more rational use of energy in the building materials industry, energetic optimizations of the production processes will be undertaken and solid fuels will be used as sources of energy instead of fuel oil. In the cement industry and in the ceramic bathroom fixtures and heavy clay industries, related tasks provide for the eventual conversion of entire technologies. Enterprises in the cement industry, for instance, are progressively converting to the dry process, more favorable from the point of view of energy economy.

For many years, the Magdeburg VEB special construction combine has been developing and building kilns for the firing of fine and coarse ceramic products. These are highly appreciated both at home and abroad. The first tunnel kiln for the firing of porcelain in the GDR was placed into service 24 years ago at the Colditz VEB Porcelain Manufacture. Since then, thanks to purposeful development work, these installations have become always more efficient, more economical of materials and, above all, more economical with respect to energy.

The Magdeburg oven constructors have developed a short tunnel kiln specially intended for the reconstruction of tile factories. Contrary to the traditional kiln which requires a construction time of three to four months, it takes only three days to erect the body of this kiln. Further development in this field is determined by high economic objectives with respect to energy. Among others, tunnel kilns for building and coarse ceramics are planned, which would use solid sources of energy.

With the creation of a thermal interlocking system between tunnel kiln and dryer, the Koenigsau VEB Tile Factory has been able to make better use of waste heat. Each year, 4,400 tons of brown coal briquettes and 350 tons of fuel oil can be saved that way. At the Unterloquitz VEB United Thuringian Slate Quarries, an enterprise carrying the title of "model enterprise with respect to energy management," the kiln facilities for the expansion of slates has been reconstructed. As a result, the annual throughput was increased by 100,000 cubic meters of porosity sinter, and the use of brown coal dust was reduced by 9 kilograms per cubic meter of product.

At the Zeithain branch of the Riesa VEB Building Materials Factory, in cooperation with the Markkleeberg Engineering School for Energy Management, a process analysis for the optimization of the vaporization process in hollow building blocks has been developed. As a result, the gates of the vaporization chamber were rebuilt and heat losses decisively reduced. The use of louvers instead of folding gates provides a tighter sealing of the chamber and results in an annual savings of 280 tons of brown coal briquettes; this represents 4.5 percent of the total consumption. All together, the gravel and beton works of the Zeithain branch of the Riesa VEB Building Materials Factory have reduced their energy consumption over a 3 years' period by 2,500 MWh of power, 3,300 liters of diesel fuel, and 1,350 tons of brown coal briquettes, while at the same time increasing their production. This is why, two years ago, this branch--the first bezirk-managed building materials producer of the Dresden Bezirk--was distinguished as a "model enterprise with respect to energy management."

The building materials industry is assuming an important part in the comprehensive implementation of energetically and economically profitable building projects. At present, approximately 35 percent of the commodity energy in the GDR is used for heating purposes. Through improved heat insulation of newly build and reconstructed buildings, and through the perfecting of technical building equipment, this quantity will be reduced by 30 percent in the next five years of the plan. This is equivalent to a saving of 5.5 million tons of raw brown coal. Thus, an above-average increase in the production of high-quality insulating materials and thermally insulated wall elements is expected.

IMPORTANCE OF FARM ANCILLARY ACTIVITIES STRESSED

Budapest FIGYEL in Hungarian No 36, 3 Sep 80 pp 1, 2

(Article by Peter Bonyhadi: "Ancillary Activity Is Important")

(Text) There are relatively few restrictions on the ancillary activity of agricultural producer cooperatives (TSEs). The pertinent government decree lists 23 activities that the TSEs may not pursue as ancillary activities, but these restrictions do not hamper at all the economical operation of TSEs. The "remaining" ancillary activities cover a wide range and accounted for 40 percent of the TSEs' proceeds from sales last year.

In plain language, ancillary or other-than-basic activity is any activity other than livestock production and soil cultivation. Law No III of 1967 enabled the TSEs to pursue ancillary activities. Availing themselves of the opportunities provided by the Law on TSEs, 57 percent of the TSEs conducted some sort of ancillary activity in 1967, and 87 percent in 1968. Between 1967 and 1970, sales from ancillary activity multiplied, and their proportion within total sales exceeded 30 percent.

In addition to food processing, the TSEs set themselves up also for various industrial activities and services, by purchasing at scrap value the still usable machinery that large-scale industrial plants discarded, and by utilizing their own cheap labor.

The TSEs with ancillary activities undertook first of all whatever was uneconomical for the large-scale industrial enterprises, and what these enterprises therefore did not undertake or undertook only out of necessity.

There certainly are many cases of abuse in conjunction with ancillary activity, but no one has ever contended that the abuses should be equated with ancillary activity. However, some people did fear--and not always without some justification--that the shops of the TSEs might idle in industry modern factories equipped with machinery worth millions, might lure manpower away from industry, and that in agriculture the favorable entrepreneurial opportunities might relegate into the background the agricultural cooperatives' farming activity. As a rule, however, these "fears" were unfounded, and in most cases the TSEs' industrial activity remained within suitable limits.

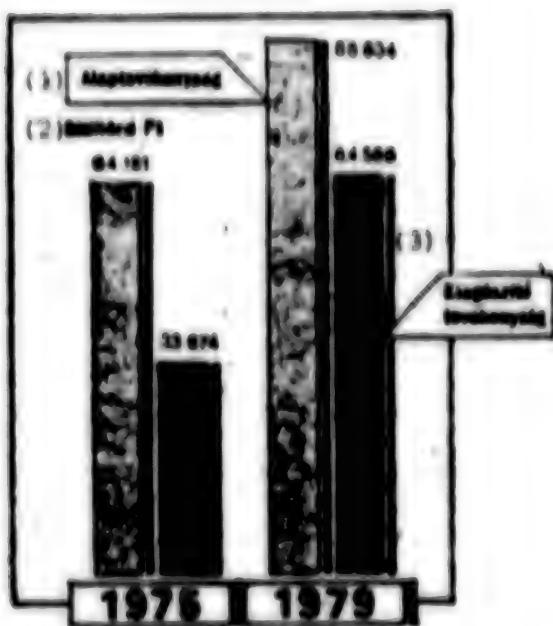


Figure 1. Breakdown of the net sales of agricultural TBSs.

Key: 1. Basic activity 3. Ancillary activity
2. Billion forints

Licensing--21 Approvals

Government regulations specified that from 1971 on the TSZs could undertake engineering-industry, chemical-industry or light-industry activity only on the basis of contracts concluded with a state enterprise or state institution. In the vicinity of Budapest and of the five largest provincial centers, moreover, TSZs could not undertake engineering-industry, chemical-industry or light-industry activity. A list was compiled of explicitly prohibited industrial activities, and of industrial activities subject to special licensing. The latter category includes metallurgy, engineering, technological installation, construction and installation work, large-panel construction, storage and distribution of petroleum products, production of poisons, explosives, paints, varnishes and rust-proofing coatings, preparation of rum and spirits without distillation, wholesale trade, book publishing, printing, and inland forwarding. In some instances this list hampered the development of ancillary industrial activities and services by TSZs.

Five statutes regulate ancillary activity at present. To undertake an ancillary activity that is subject to special licensing, and to include such an activity in its by-laws, a TSZ must obtain approval from 21 different agencies. Moreover, each ministry set up its own procedures for licensing ancillary activities under its supervision.

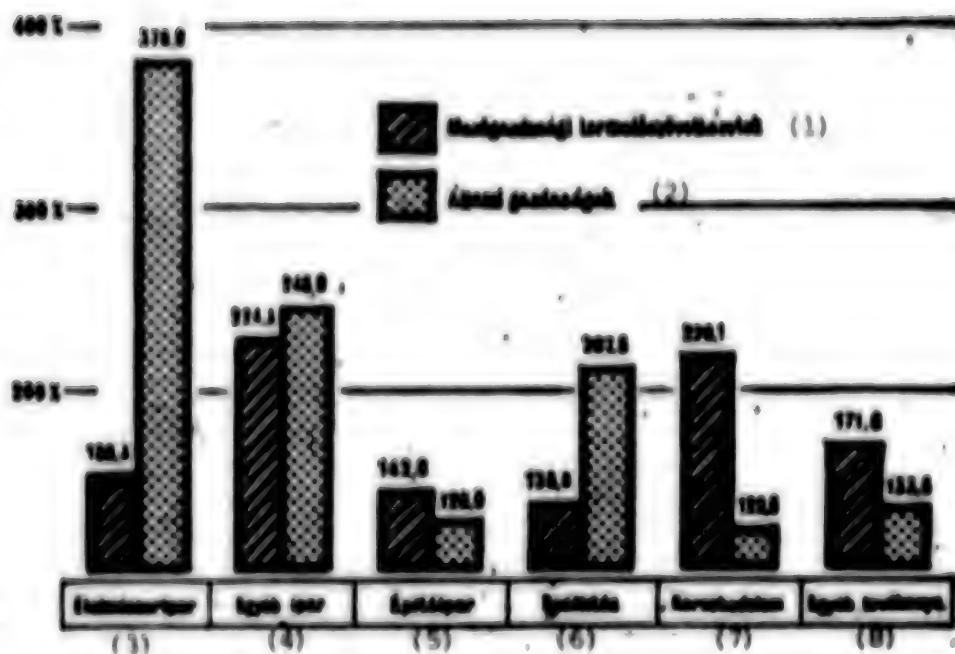


Figure 2. Net sales from ancillary activities of TSEs and state farms in 1979, in percent of 1975.

Key:

1. TSEs	5. Construction industry
2. State farms	6. Transport
3. Food industry	7. Trade
4. Other industry	8. Other activities

In many places the local managing organs went beyond the central measures. A magic phrase was coined: "Structure-alien activity." If an activity was branded "structure-alien," it had to be discontinued. It was to no avail that the undertaking satisfied an actual social need, that the profit from it was used to develop farming, or that it perhaps solved the problem of seasonal unemployment.

The invention and application of the ancillary activities' classification into "developable," "maintainable," and "curtailable" led to the review, based mostly on administrative considerations, of ancillary activities that the agricultural TSEs had undertaken to satisfy warranted social needs.

No one wishes to dispute on this occasion that the TSEs' ancillary activity, just as any economic activity, must be regulated in some way or other. But it is not always fortunate if such regulation consists of administrative restrictions. A much better method of regulation, for example, is to influence the conditions of self-interest. Of course, this method also was employed to regulate TSE ancillary activity. A TSE was assigned to different tax brackets, depending on the extent of its ancillary industrial activity.

Kitten in Tiger's Cage

A TSZ whose proceeds from industrial activity amounted to between 30 and 50 percent of its total sales was assigned to the agricultural-industrial category, and one whose proceeds from industrial activity exceeded 50 percent of total sales was placed in the industrial-agricultural category. This, of course, is not merely a question of designation. The so-called agricultural-industrial TSZs paid only production tax, while the industrial-agricultural TSZs paid also a capital use charge, salary tax and development tax. As of 1976 the production tax was increased by 5 percentage points for the agricultural-industrial TSZs, and by 10 percentage points for the industrial-agricultural TSZs. Furthermore, the production tax of the agricultural-industrial and industrial-agricultural TSZs in the vicinity of Budapest was increased by 10 percentage points more. (On the other hand, TSZs operating under unfavorable economic conditions enjoy a 70-percent tax exemption.)

Indirect regulation that operates with self-interest but is coupled with administrative restrictions reminds us of a cage designed for a tiger but used to house merely a kitten. According to the data of the KSH (Central Bureau of Statistics), in 1978 the ancillary activities of agricultural and forestry enterprises provided merely 3 percent of socialist industry's output in value terms.

The breakdown of this 3-percent share by industries was as follows: mining, 2.2 percent; metallurgy, 0.7 percent; engineering, 11.6 percent; construction materials industry, 1.3 percent; chemical industry, 4.7 percent; woodworking, 19.1 percent; light industry, 3.8 percent, and food industry, 56.6 percent. Within the TSZs' total net sales of 191 billion forints during this period (i.e., in 1978), ancillary activity accounted for 74 billion forints, including about 13 billion from actual industrial activity.

Although ancillary activity reduces the risk of agriculture that even today depends on the weather, not every farm has been able, and not everywhere is it feasible, to engage in ancillary industrial activity or services. For example, homework or coproduction of parts is influenced by distance from the factories and the transportation conditions. As a rule, the regional political and governmental leaderships also adopt a standpoint on ancillary activity.

Loss Bearer?

The intensity of ancillary activity in Hungary varies practically by megyes or groups of megyes. For example, ancillary activity provides 70 percent of the TSZs' sales in Pest Megye, and 50 percent in Komarom Megye. Pest, Komarom and Veszprem megyes account for 12 percent of the TSZs, and ancillary activity provides 33 percent of their sales. (On a national average, 20 percent of a TSZ's sales stems from ancillary activity. Only in the TSZs of Baranya, Gyor, Szolnok and Tolna megyes is this proportion below the national average.)

This proportion provides food for thought also because computations show that the unprofitability of farming is practically excluded on these farms where ancillary industrial activity or services account for more than 30 percent of sales. On the basis of the known relationship--that much of the income from ancillary activity is used to develop agriculture--it can be said that the higher the proportion of sales from ancillary activity, the greater the increase of sales per hectare from farming.

It is not indifferent, of course, what the specific ancillary activity is. Profit in relation to sales was high in metallurgy, engineering, light industry, heavy industry, and transportation. It was average in construction and the food industry, and low in trade. We place special emphasis on the past tense because new pricing regulations apply as of 1980 to TSZ ancillary activity, and these new regulations will probably rearrange the conditions of self-interest.

It has been necessary to adapt to the rules of the price reform in industry, because as of 1980 the regulations governing pricing apply to individual products and groups of products, independently of sectoral affiliation.

In general the price reform demanded a significant reduction of the profit on industrial products and services, and the application of profit rates commensurate with capital + wages actually realizes this profit reduction in the starting prices. State industry's low rates of profit commensurate with capital + wages would have resulted in even lower profits for cooperatives, because of their smaller capital.

New System of Pricing

The TSZs succeeded in persuading the competent price authorities to recognize this fact. Thus the profit on the industrial activities of large-scale farms was made commensurate not with capital + wages, but with sales, and in the cost calculation necessary to form the starting prices as of 1 January 1980 it was possible to include sales-commensurate profit rates of 6 percent on products, and 8 percent on services.

Acceptance of this principle has alleviated the situation considerably, but even so a sharp decline of profits can be expected. To avoid this, the circle of products has been expanded that the large-scale farms do not price on the basis of their production costs and low profit rates, using instead the officially fixed or limited prices, and the free prices set by state enterprises and industrial cooperatives and issued in price lists.

Under this method the price level that develops on the basis of the state enterprises' costs enables the TSZs--assuming that their costs are lower--to realize more profit, without violating the statute that bans unfair profit.

According to another solution, the cooperatives set their prices on the basis of the standard profit rates and their production costs, but they depart from these prices within the limits allowed by the price mechanism, or perhaps through a broader interpretation of the price mechanism. With due consideration for the conditions of supply and demand, however, it is possible to depart from the calculated price also by mutual agreement with the buyer.

The new system of pricing, of course, affects the previous contractual relations of the TSZs. The circle of contractual relations is fairly broad, because even in the capital the largest enterprises belong among the customers of the TSZs' ancillary activities.

In spite of all this, ancillary activity will gain final recognition only if some economic necessity demands it. It now appears that such an economic necessity is emerging. The economic necessity that is about to gain acceptance for ancillary activity is the need to develop basic industry.

Basic Industry

The export of finished products is hampered, and often rendered uneconomical, by the lag in the production of parts, subassemblies and semifinished products, or in other words by the lag of basic industry, and by the forced importation of parts in the absence of domestic production. On this occasion we will dispense with a detailed analysis of the various organizational problems in conjunction with the development of basic industry. However, the possible solutions include also ancillary production by TSZs. The TSZ shops are small or intermediate in size, and even at their present technical level they are or can be made suitable for the production of low-technology products of basic industry that require relatively little manpower. In view of their size and short production cycle, the TSZ shops could respond quickly and flexibly to the demand at any given time. Their production costs, too, are competitive as a result of their relatively lower capital costs.

"Discovery" of these attributes of the TSZ ancillary shops was followed by immediate action, or at least effort. Central mapping of the demands and possibilities was begun. It was necessary to seek answers to such questions as, for example, the following:

How much engineering capacity do the TSZs have?

Are they engaged in the production of parts or subassemblies?

How are they supplied with skilled labor?

What is the territorial distribution of the engineering capacities?

To create the conditions of economic activity it was necessary to review what effect the 1980 price system and system of regulation have on the

developmental objectives of basic industry; or more specifically, what preferences could be provided to develop the production of parts and subassemblies in ancillary shops of TSZs. What could be done to facilitate the transfer or sale of surplus capital equipment from large-scale industry to the ancillary shops of TSZs? How would it be possible to provide modern technology, licensing and know-how for the parts-producing ancillary shops of TSZs?

With or Without Preferences

Inclusion of the TSZ ancillary shops in the output of basic industry is much more complicated, however, than merely offering them the opportunity. For example, the branches of industry concerned would have to compile and publish lists of products, so that the ancillary shops of TSZs would know what to produce. Primarily the industrial enterprises should organize the coordination of industry's demand with the possibilities of the TSZ shops, the procurement of technology and basic materials, and the marketing of finished products.

In general, the ancillary activities of TSZs for basic industry can be developed only where available unused buildings could be converted at low cost to make them suitable for modern technology. But even so, TSZ entrepreneurship cannot be expanded without money!

Only on TSZs operating under unfavorable economic conditions is ancillary activity supported by subsidies repayable from the production tax. However, full-scale development of such activity would require abolition of the privilege born of necessity. In other words, the conduct of ancillary activity should not be the "privilege" of TSZs operating under unfavorable economic conditions. The conditions for the preferential development of such activity could be created by having the ancillary shops of TSZs switch to the "ancillary" production of mostly products that up to now could be procured only through import. In this way it would be possible to provide credit for increasing the output of products that can be exported for convertible foreign exchange. Furthermore, the amount of own resources needed to qualify for such credit could be reduced, and in exceptional cases this requirement could be waived altogether.

It certainly will be necessary to review also some of the tax regulations. For example, wages for the production of parts and subassemblies deemed especially important could qualify for the same type of tax exemption as in the case of growing vegetables and berries, or of planting vineyards and orchards.

However, a prerequisite for all this is the review and simplification of the maze of regulations governing industrial activity by TSZs. According to one bitter comment, the licensing procedure still takes longer than the production of the licensed products.

ROLE OF TRADE UNIONS IN POLITICAL SYSTEM DISCUSSED

Belgrade RAD in Serbo-Croatian No 38, 12 Sep 80 p 6

[Article by Z. Bosnic-Vojadinovic: "On an Equal Footing and in the Interest of the Working Class"]

[Text] The Presidium of the Council of the Federation of Yugoslav Trade Unions held a session last Friday in Belgrade--chaired by Miran Potrc, chairman--at which it debated performance of the role of the Council of the Federation of Yugoslav Trade Unions in the institutions of the political system of the Federation and in the political system in general, as well as certain issues related to housing policy.

The League of Trade Unions, it was said at the meeting, has so far been concerned with performance of its role in the political system on several occasions and it came to the conclusion that there are difficulties in performance of that role, but also shortcomings and vacillation in the method of operation. That is, since the Eighth Congress of the Federation of Yugoslav Trade Unions, it has been an obligation of the Federation of Trade Unions to make the viewpoints of the working class as present as possible in the sociopolitical life of society, and thus the principal task of the Council of the SSJ [Federation of Yugoslav Trade Unions] is to give those viewpoints equal status in a dialog with others, especially in the places where decisions are made. It has not always been successful in this, of course, since there were situations where the trade union was "bypassed," or when its viewpoints were not given equal treatment with other viewpoints. There were also cases when the trade union was tardy in becoming involved in debates on important issues and legal solutions, when it did not submit its observations and proposals on time, and thus even its qualitatively new status did not always yield the desired results.

Affirmation of the Dinar for Housing

In the opinion of Djordje Lazic, the trade union has been given new tasks and also new instruments for performing them, but it has not been ready enough to fight for its stands, nor has it found the right solutions in its efforts. Kolj Siroka, however, is of the opinion that even in the Socialist Alliance there have not always been common viewpoints of sociopolitical

organizations, which has also tended to make them less than equal to others in a dialog. But it is also true that the representatives of the League of Trade Unions seldom come to parliamentary bodies where decisions are made on very important issues and where it is not enough to merely send in conclusions. In that arena, Dusan Bogdanov said, one has to fight with the force of arguments, and therefore the presence of members of the council is indispensable.

in spite of these shortcomings, a radical change has been accomplished in the method of operation, according to the opinion of Rade Galeb, and objectively all conditions exist in it for active involvement in the decision-making process. But the trade union organization is not altogether equipped for this, since this is a rather lengthy process. When it achieves that, when the demands of the workers discover themselves to be equal where decisions are being made, then the trade union will be performing its role.

Obviously the trade union has managed to examine the problems and difficulties after 2 years of work, which is why this topic was put on the agenda. The delegate system, that is, better work of delegates and delegations in all federal bodies, is being mentioned more and more as a possible solution. If the right method of operation is found in good time, the delegate system within the trade union organization will certainly overcome these difficulties, and the trade union will have a much greater influence than up to now on the taking of many important decisions and laws embodying the system, which is very important to associated labor.

Good Use of the Housing Dinar

The second topic debated by the Presidium of the Council of the SSJ was also extremely important. This was housing policy and possibilities for its future financing.

Experience shows that in spite of all the efforts and the results achieved in socioeconomic relations, there are still problems in the housing field, and so fewer housing units were built than was planned. In this medium-term period the shortfall will be 100,000 dwelling units lower than what was planned, and the reason lies in slow formation of self-managed associations of all participants in construction of housing, in utilities and municipal services, and in the price of the dwelling units, which over the last 4 years has risen 43 percent, as well as in shortages of building materials and slowness in site preparation. All of this, it was stated at the meeting, is mainly dealt with in opstinas, and therefore it requires particular activity on the part of opstina and basic trade union organizations.

In his introductory remarks Sefcet Jasari, however, emphasized that in the coming medium-term period the investment of private funds of individuals in housing construction and also solidarity funds will have an important role in housing policy, since the financing of housing construction in work

organizations is to come from net income. There were, of course, many questions left open in the meeting, such as the following: the economic crisis of rents, or the burden of taxes and contributions on funds set aside for housing construction, for which the right solutions also have to be found, and so on.

It is certain that the trade union will be debating the financing of housing construction, solidarity, involvement of the personal funds of citizens in this field, but it will demand that in this case utilities and social services be financed from certain other sources, so that the dinar set aside for housing construction is indeed spent for that purpose. Of course, there must be much greater clarity in both credit policy and also the attitude toward cooperatives, which is beginning to come out more and more in favor, but in practice it is nevertheless slowing things down.

At the end of the session the presidium adopted the proposal to push clocks back 1 hour, while at the same time taking note that better arguments must be given concerning the benefits of this action.

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YUGOSLAVIA

CAPACITY, OPERATION OF MERCHANT MARINE, 1979

Belgrade TRANSPORT in Serbo-Croatian No 7, Jul 80 pp 28-30

[Excerpt] As of 31 December 1979 the Yugoslav Merchant Marine had a total of 339 vessels, whose average age was 11.2 years and which totaled 2,389,233 gross registered tons and 3,701,842 deadweight tons and a passenger capacity of 17,323.

The table below surveys the fleet's capacity over the last 3 years:

Table 1

<u>Description</u>	<u>Condition of Fleet</u>			<u>Index 79/75</u>
	<u>1977</u>	<u>1978</u>	<u>1979</u>	
Number of vessels	332	337	339	100.6
Gross registered tons	2,226,901	2,336,745	2,389,233	102.2
Deadweight tons	3,433,957	3,618,568	3,701,842	102.3
Passenger capacity	17,114	17,832	17,323	97.1
Horsepower	1,797,925	1,867,555	1,927,455	103.2

It follows from this survey that since last year the fleet has grown only 0.6 percent in terms of the number of vessels and 2.3 percent in deadweight tonnage. In 1975 it had 318 vessels whose average age was 10.3 years; they totaled 1,901,728 gross registered tons and 2,886,261 deadweight tons and had a passenger capacity of 16,371. The growth between 1975 and 1979, then, has been as follows:

In number of vessels only	6.6%
In gross registered tons	25.6%
In deadweight tonnage	28.2%
In passenger capacity	5.8%

This is a very modest increase, and it was achieved mainly by purchasing vessels abroad.

Then if we compare the age-specific composition of the fleet with the world fleet, we come to the following conclusions.

According to the figures of Lloyd's statistical service, the age-specific composition of the world fleet as of 1 July 1979 was as follows:

Under 9 years	257.3 million gross registered tons, or 62.2%
Between 10 and 14 years	74.5 million gross registered tons, or 18.0%
Over 15 years	81.2 million gross registered tons, or 19.7%

At the same time the age-specific composition of the Yugoslav fleet was as follows:

Under 9 years	894,300 gross registered tons, or 37.1%
Between 10 and 14 years	762,300 gross registered tons, or 31.7%
Over 15 years	750,600 gross registered tons, or 31.2%

These figures show that the merchant fleet is older than the world average, and there is good reason to say that the Yugoslav fleet is very old and is in urgent need of replacement.

Moreover, we would like to point out that the process of simple reproduction is not being accomplished in the merchant marine, as can be seen from the following:

The deadweight tonnage of merchant vessels less than 10 years old was 39.1 percent of total deadweight tonnage at the end of 1979, while in previous years this proportion was as follows:

In 1978	43.1%
In 1977	50.5%
In 1976	54.1%
In 1975	55.6%
In 1974	58.6%

So, again from these figures one sees that the process of aging of our fleet is continuing at a drastic pace, since the share of vessels under 10 years of age has dropped all of 19.5 percent since 1974, which indicates the seriousness of the problem, especially since we see that even simple reproduction is not being accomplished in the merchant marine. This lag in development of the fleet, in modernization and in application of new technology in shipping which meets the requirements of the present-day market also has the consequence of a weakening of competitive capability on the world maritime market.

Business Indicators and Economic Results

a) Cargo and Passenger Traffic

The table below shows the total volume of traffic and the share of various types of cargo carried by our vessels.

Table 2

<u>Type of Cargo</u>	In thousands of tons				
	<u>1978</u>	<u>1979</u>	<u>Structure</u>	<u>Index</u>	<u>79/78</u>
Exports	1,463	1,175	6.6	4.9	80
Imports	4,308	4,974	19.3	20.9	115
Exports + imports	5,771	6,149	25.9	25.8	106
Transit	468	469	2.1	2.0	100
Total traffic through Yugoslav seaports	6,239	6,618	28.0	27.8	106
Between foreign ports	13,910	14,479	62.3	60.9	104
Total international traffic	20,149	21,097	90.3	88.7	105
Coasting	2,159	2,670	9.7	11.3	124
Total cargo carried	22,308	23,767	100.0	100.0	106

It is evident from the survey in the table that the total volume of cargo carried by our vessels increased 6 percent over the previous year.

Total international traffic increased 5 percent, while coasting between domestic ports increased all of 24 percent. The traffic of export cargo dropped appreciably, all of 40 percent, while import cargo showed an increase of 15 percent, and the share of our vessels in carrying Yugoslav exports and imports as a whole increased only 6 percent. The volume of transit cargo through Yugoslav seaports carried by our vessels remained at the level of last year. Taking all elements into account, the volume of cargo taken from or delivered to Yugoslav seaports increased 6 percent, while the volume between foreign ports rose 4 percent over the previous year.

Yugoslav imports and exports had a share of 25.8 percent in the total cargo carried by our vessels (25.9 percent in the previous year), and the share of transit cargo was 2.0 percent (2.1 percent the previous year), i.e., total cargo our vessels took from or delivered to our seaports represented 27.8 percent (28 percent the previous year) of the cargo they carried in international trade. Total cargo carried between foreign ports represented 60.9 percent (62.3 percent the previous year). On the basis of these volumes for various categories of cargo, it turns out that international traffic represented 88.7 percent of the total cargo carried (90.3 percent the previous year), and coasting 11.3 percent (9.7 percent the previous year).

Of the total 21,097 tons carried (not including coasting), export cargo had a share of 4.9 percent, import cargo 20.9 percent, transit 2 percent and cargo between foreign ports 60.9 percent.

The share of Yugoslav and foreign vessels in carrying Yugoslav exports and imports is shown in the table below.

Table 3

	Share of total = 100				
	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>
Exports					
Total	100.0	100.0	100.0	100.0	100.0
Yugoslav vessels	30.9	36.4	33.6	39.2	32.9
Foreign vessels	69.1	63.6	66.4	60.8	67.1
Imports					
Total	100.0	100.0	100.0	100.0	100.0
Yugoslav vessels	44.7	25.6	25.7	28.2	26.6
Foreign vessels	55.3	74.4	74.3	71.8	73.4
Total					
Total	100.0	100.0	100.0	100.0	100.0
Yugoslav vessels	42.0	27.8	27.4	30.4	27.6
Foreign vessels	58.0	72.2	72.6	69.6	72.4

If we analyze the relative shares of exports and imports over the last 5 years, we conclude that our fleet's share in carrying exports and imports that travel by sea is modest. The year 1975 was an exception, when there was an increase in the share of our vessels carrying Yugoslav imports, and their share of Yugoslav exports declined minimally; that is, our vessels carried 30.9 percent of Yugoslav exports (31.1 percent in 1974), 44.7 percent of Yugoslav imports (17.6 percent in 1974) and 42 percent of total Yugoslav exports and imports (20.7 percent in 1974). By contrast the share of foreign flags in carrying Yugoslav exports and imports dropped in 1975, as follows: foreign flags had a share of 69.1 percent of Yugoslav exports (68.9 percent in 1974), 55.3 percent of Yugoslav imports (79.3 percent in 1974). Though we can still say that this share in 1975 is a high share for the foreign flags. However, it was thought that 1975 marked the turning point and that the growth trend to the advantage of the domestic flag could be still more favorable in subsequent operation. However, in spite of all expectations we have the opposite in 1976, 1977 and 1978 (a somewhat milder decline), i.e., a sharp drop in our fleet's share of carrying Yugoslav exports and imports. In 1979 the export cargo carried by Yugoslav vessels was down 16.7 percent over the previous year, while import cargo showed an increase of 13.7 percent; in 1979 the total of export and import cargo carried by our vessels increased 6.1 percent over 1978; or, in relative terms (there is a decline) our fleet had a share of 32.9 percent of Yugoslav exports in 1979 (last year 39.2 percent), 26.6 percent of Yugoslav imports

(last year 28.2 percent) and 27.6 percent of total exports and imports (30.4 percent last year). In conclusion, then, we can state that the share of the foreign flags in carrying Yugoslav exports and imports has remained very high.

Total passenger volume (according to figures of the Federal Bureau of Statistics) has been as shown in the table below.

Table 4

<u>Type of Traffic</u>	<u>In thousands</u>					
	<u>1978</u>	<u>1979</u>	<u>Structure</u>	<u>1978</u>	<u>1979</u>	<u>Index</u>
International	190	152	2.8	1.9	80	
Domestic	6,523	7,904	97.2	98.1	121	
Total	6,713	8,056	100.0	100.0	120	

Total passenger volume increased 20 percent, the domestic passenger volume increasing 21 percent and the international passenger volume dropping 20 percent.

b) Foreign Exchange Transactions

The operating statement of maritime shipping with respect to foreign exchange in 1979 is shown in Table 5.

Table 5

<u>Description</u>	<u>In millions of dollars</u>					
	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>Index 1978 = 100</u>	<u>1977</u>	<u>1979</u>
Foreign exchange inflow*	484.1	540.1	658.3	90	122	
Foreign exchange outflow*	285.6	327.3	378.0	87	115	
Net foreign exchange inflow	198.5	212.8	280.3	93	132	
Level of foreign exchange costs, in percentage	59.0	60.6	57.4	97	95	
Rate of net foreign exchange inflow, in percentage	41.0	39.4	42.6	104	108	

* Not including a foreign exchange inflow of \$10.3 million and a foreign exchange outflow of \$10.1 million of Beogradplov.

It is evident from what is shown above that total foreign exchange inflow increased 22 percent in 1979, while the foreign exchange outflow showed a

slightly slower growth of 15 percent. It follows that economic efficiency in foreign exchange operations was somewhat better than in the previous year, since foreign exchange costs increased more slowly than foreign exchange revenues, so that the net foreign exchange inflow increased all of 32 percent over the previous year. It is evident that because of the more favorable trend of foreign exchange costs, the rate of net foreign exchange inflow increased 8 percent over the previous year.

Foreign exchange transactions in 1979, then, occurred under still more complicated conditions than in 1978. In spite of the fact that rates increased during that period, there was a further increase in operating costs, which detracted from the otherwise more favorable operating results of work organizations in the shipping industry.

Yet if we analyze the favorable effect of maritime shipping on the country's balance of payments in terms of the net foreign exchange result (net foreign exchange inflow minus payments to repay foreign credits), then we can conclude that in 1979 it amounted to \$208.5 million, as against \$134.9 million in 1978, marking an appreciable increase of 54.5 percent. Up through the end of 1979 the foreign exchange which the shipping industry brings in had not been appreciated for anything like its true value by comparison with what is achieved by the export of commodities. This is manifested above all in the appreciably smaller tax deductions and foreign exchange incentives afforded to exporters of services and in the fact that they cannot dispose freely of their foreign exchange.

We should mention that maritime shipping is bringing in more than 20 percent of the inflow of foreign exchange from total exports of all services and more than half of exports of transportation services, or about 10 percent of total exports of all goods.

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DATA ON SEAPORT OPERATIONS, 1972-1979

Belgrade TRANSPORT in Serbo-Croatian No 7, Jul 80 pp 32-36

[Article by Atanasije Spasic]

[Text] 1. Total Volume of Cargo

A cargo volume of 31.1 million tons was handled in all Yugoslav seaports in 1979, which is a 12-percent increase over the previous year. By contrast with the rate of annual growth of the total volume of cargo over the previous 3 years, which was about 1 million tons per year, in 1979 this increase was nearly 3.5 million tons over the previous year. This resulted primarily from the rather high growth of imports of commodities through Yugoslav seaports. The volume of port traffic in 1979 was a record for any year since the war and over the entire period of our seaports' existence.

The rate of growth of total port cargo traffic through all Yugoslav seaports has been as follows over the last 8 years:

1972	19.5 million tons
1973	20.9 million tons
1974	23.8 million tons
1975	22.4 million tons
1976	25.1 million tons
1977	26.1 million tons
1978	27.1 million tons
1979	31.1 million tons

In spite of the relatively satisfactory growth trend of port traffic (if we exclude 1975, when that traffic dropped), we still cannot be satisfied with the volume of traffic achieved, since by comparison with the advanced European and other world seaports, our port traffic is at a very low level.

All our seaports taken together have an annual cargo traffic that is approximately equal to the traffic of a single medium-sized European seaport.

2. Distribution of Port Traffic by Cargo Categories

The table below shows distribution of the volume of traffic by the principal categories of cargo in 1979.

Table 1

<u>Description</u>	In thousands of tons		
	<u>1978</u>	<u>1979</u>	<u>Index</u> <u>79/78</u>
Total seaport traffic	27,703	31,097	112
Breakdown:			
Coasting	5,001	5,907	118
Exports	3,277	3,262	100
Imports	13,593	16,409	121
Transit	5,832	5,519	95

It is evident from these figures that a rather high growth has been recorded for coasting and imports, while export cargo was at the level of the previous year (1978), and transit cargo dropped 5 percent. More than 50 percent of total seaport traffic consists of imports through our seaports; exports and transit are relatively small, which cannot be looked on favorably, since the imports consist mostly of bulk and liquid cargoes (crude petroleum), to which low rates apply. Exports through seaports consist largely of general cargo and timber and lumber, i.e., high-rate cargo, and transit brings in foreign exchange revenues.

In terms of percentage, the distribution of total port traffic by categories of cargo was as shown in the table below.

Table 2

<u>Description</u>	In percentage	
	<u>1978</u>	<u>1979</u>
Total seaport traffic	100.00	100.00
Breakdown:		
Coasting	18.05	18.99
Exports	11.83	10.49
Imports	49.07	52.77
Transit	21.05	17.75

3. Total Cargo Traffic in the Principal Ports

A rather high growth of total cargo traffic was achieved in 1979 at all the principal ports except Sibenik, and the increase was especially large at Dubrovnik and Bar, as can be seen from the comparison given in Table 3.

Table 3

<u>Seaports</u>	In thousands of tons		
	<u>1978</u>	<u>1979</u>	<u>Index</u> <u>79/78</u>
Koper	2,115	2,367	112
Rijeka	14,733	16,419	111
Sibenik	845	791	94
Split	2,624	3,087	118
Ploce	3,247	3,760	116
Dubrovnik	244	382	157
Bar	1,280	1,634	128

We can frame the following conclusions from this comparison:

- a) that in 1979 the port of Rijeka appreciably increased the volume of its traffic (by 1.7 million tons) and that it is continuing to consolidate its leading position ahead of all other Yugoslav seaports;
- b) that the port of Koper is approaching an annual volume of 2.5 million tons, which is a great success when we take into account that this seaport has a very favorable composition of traffic with respect to types of cargo, since general cargo is predominant in its traffic;
- c) that the port of Split, in spite of its difficulties related to its transportation connections with the hinterland, achieved a large growth of nearly half a million tons in its traffic;
- d) that the port of Ploce, which had a traffic of 3.8 million tons in 1979, established itself still more firmly in second place after Rijeka in the volume of cargo traffic;
- e) that the port of Dubrovnik showed the largest relative increase in the volume of its traffic of all the seaports (57 percent), which is an exceptional success since this port has no rail connection with the hinterland;
- f) that the port of Bar, in spite of the extensive damage it suffered from the catastrophic earthquake on 15 April 1979, achieved a high growth of traffic in 1979, which actually represents the first solid effect of the new Belgrade-Bar railroad, which is now beginning to operate smoothly.

Table 4 shows the share of the various principal seaports in total cargo traffic through all Yugoslav seaports.

This distribution shows that the ranking of our principal ports with respect to volume of cargo traffic in 1979 was as follows:

1. Rijeka
2. Ploce
3. Split

4. Koper
5. Bar

6. Sibenik
7. Dubrovnik

Table 4

	In percentage	
	<u>1978</u>	<u>1979</u>
Total cargo traffic	100.00	100.00
Breakdown:		
Rijeka	53.18	52.80
Koper	7.63	7.61
Sibenik	3.05	2.54
Split	9.47	9.93
Ploce	11.72	12.09
Dubrovnik	0.88	1.23
Bar	4.62	8.55
Other seaports	9.45	8.55

A fuller and clearer picture of the share of the principal seaports in Yugoslavia's total seaport traffic can also be obtained from Table 5, which shows their traffic over the last 8 years.

Table 5

<u>Principal Ports</u>	Total traffic, in thousands of tons							
	<u>1972</u>	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>
Koper	1,944	1,861	1,981	1,867	2,102	1,903	2,115	2,367
Rijeka	9,941	10,483	12,663	12,029	13,997	14,135	14,733	16,419
Sibenik	700	935	931	899	815	824	845	791
Split	1,632	2,040	2,516	2,181	2,335	2,464	2,624	3,087
Ploce	2,025	2,452	2,476	2,210	2,926	2,971	3,247	3,760
Dubrovnik	332	246	314	216	250	276	244	382
Bar	837	902	921	950	1,068	1,945	1,280	1,634

The following observations are justified by an examination and comparison of the figures on the various seaports in the table:

- that the port of Koper had an annual traffic of about 2 million tons over the entire 8-year period and that in 1979 it showed a quite appreciable increase to 2.4 million tons;
- that in all these years the port of Rijeka has been far above all the other seaports in its traffic and that its annual cargo traffic, which has

ranged between 10 and 16.4 million tons, has been greater than the sum total of the traffic of all other principal ports (however, we should mention at this point that petroleum represents more than 50 percent of Rijeka's total traffic);

c) that the traffic of the port of Sibenik in recent years has stayed at a level of about 800,000 tons a year and that an increase should be expected upon completion of construction of the modern terminal for phosphates which is now under way;

d) that the traffic of the port of Split has risen steadily over the last 5 years and that in 1979 it achieved a record of over 3 million tons, which is mostly the result of increased petroleum traffic;

e) that the annual traffic of the port of Ploce has almost doubled over the last 8 years and that particularly large jumps were achieved in 1976 and 1979, and that this port is becoming ever more firmly established in second place after Rijeka;

f) that the traffic of the port of Dubrovnik, which is appreciably smaller than for the other seaports, has fluctuated between 200,000 and 400,000 tons a year over these 8 years and that in 1979 it achieved a record volume, though the railroad line connecting it to the hinterland was discontinued several years ago;

g) that the traffic of the port of Bar in 1979 was twice as great as in 1972 and that its record of 1.6 million tons in 1979 is a rather pleasant surprise because this seaport was seriously damaged by the earthquake.

4. Container Traffic in Yugoslav Seaports

As we know, over the last 10 years Yugoslav seaports have lagged quite a bit behind the European and advanced world ports with respect to use of modern cargo-handling technology and especially technology for handling general cargo. This above all applies to the technology of integrated transport, in which shipment in containers is one of the principal forms for transport and handling of general cargo. This lag also had an impact on the stagnation in the volume of general cargo passing through our ports, since this cargo is being carried more and more in containers.

Striving as far as possible to keep up with the technological revolution in transportation and cargo handling and to meet the competition from foreign ports, the work organizations operating our seaports (Koper, Rijeka and Ploce) have organized the reception and handling of containers by opening temporary container terminals in which containers are handled with conventional machinery (floating and portal cranes). Thus the traffic of containers through our seaports, only in negligible quantities, of course, did begin a few years ago.

In the meantime accelerated investment was undertaken to build container terminals with appropriate machinery (container bridges), and in 1978 and 1979 modern terminals were opened in the ports of Bar, Koper and Rijeka, where the most up-to-date technology can be used for receiving and shipping container shipments.

Container traffic in our seaports, for the reasons given, is in the initial stage of its development. In 1978 and 1979 the volume of cargo in containers through our seaports was as shown in Table 6.

Table 6

	<u>Grouping as a Whole</u>	Seaports			
		<u>Koper</u>	<u>Rijeka</u>	<u>Ploce</u>	<u>Bar</u>
1978					
Number of containers (converted to the 20 standard container)	30,832	19,574	10,895	79	194
Amount of cargo in tons	226,834	142,119	81,905	410	2,400
1979					
Number of containers (converted to the 20 standard container)	45,453	31,023	13,975	143	313
Amount of cargo in tons	363,001	239,948	119,995	758	2,300

The figures in Table 6 pertain only to dockside handling of containers (i.e., loading and unloading of containers on and off vessels).

These figures show the following:

- that the traffic of containers in our seaports is relatively small, but is growing fast;
- that the port of Koper is far ahead of other ports in container traffic;
- that 360,000 tons of general cargo were transshipped in containers in 1979, which is a 60-percent increase over the previous year;
- that the traffic of containers through the ports of Ploce and Bar is still very small.

We should particularly emphasize that our seaports, Koper above all, are already involved in international competition in attracting containers. In 1979 15,097 containers containing 119,458 tons of transit cargo were received from and shipped to our ports; the port of Koper alone accounted for 12,798 containers containing 99,006 tons of cargo.

The results achieved in container traffic in 1979 are encouraging if we take into account that the up-to-date container terminals at Koper and Rijeka went into operation only in the second half of 1979.

5. Concise Assessment of the Principal Operating Results and Development of Work Organizations Operating seaports

Transshipment of cargo performed in 1979 by work organizations operating seaports reached the volume of 18.7 million tons, which is a 13-percent increase over the previous year. The assortment of port services has improved to a certain extent, though bulk cargoes to which low rates apply are still predominant in the composition of cargo.

Port capacities were augmented and modernized in 1979. There was a 3-percent increase in the length of docks over the previous year, a 2-percent increase in closed warehouses, a 9-percent increase in open storage areas, a 26-percent increase for refrigerated space and a 10-percent increase for dockside and mobile port machinery. The ports of Rijeka and Koper opened modern container terminals with the necessary equipment in 1979, so that at the end of the year three container terminals were operating in our seaports: Koper, Rijeka and Bar.

This assessment of the status of capacity in seaports has not taken into account the consequences of the catastrophic earthquake on the Montenegrin coast on 15 April 1979, which in the port of Bar seriously damaged some of the docks and port equipment. These port facilities are temporarily out of use, but they will be put back into service.

The trend of a continuous growth of investments in seaports, which has lasted several years now, was slowed down considerably in 1979, when the total volume of investments was only 2 percent greater than in the previous year. If we take into account that this is the growth in current prices, then it follows that there was an increase of investments only in nominal terms, while in real terms there was an appreciable drop in view of the effect of inflation.

The largest investments were made in the ports of Koper and Bar, which account for 70 percent of all investments in this grouping.

Investments in seaports were financed in 1979 mostly with bank credit (42 percent), and work organizations operating ports invested 18 percent from internal sources. In the previous year internal sources had a share of only 11 percent, and this result for 1979 can be given a favorable assessment.

The labor force in seaport work organizations totaled 12,603 at the end of 1979, which is 158 workers more than at the end of the previous year. This means that the size of the labor force increased only negligibly, and the 13-percent growth of the volume of transshipment was achieved primarily by

raising labor productivity and through better use of available port facilities. The structure of the labor force with respect to skills was not improved in 1979 in spite of the efforts of seaport work organizations to improve this distribution as capacities were modernized. The rather high personnel turnover in seaports made it difficult to achieve better results in this domain.

The gross income of seaport work organizations rose 27 percent in 1979 over the previous year, which is considerably greater than the growth of the physical volume of transshipment (13 percent). This is primarily the result of higher prices of port services and to some extent of the improved assortment of port services and the higher labor productivity.

However, costs of materials and services rose all of 40 percent, since prices in other industries rose faster than the prices of port services. This had the result that in 1979 the income of seaports rose 24 percent, i.e., 3 percent less than the growth of gross income.

An analysis of the distribution of gross income by sources showed that seaport work organizations earned most of their income again in 1979 from the services of transshipment and storage of cargo, and the share of other sources of income was very small. This demonstrates that again in 1979 our seaports were oriented primarily toward their transshipment function and that the commercial and industrial functions continued to be underdeveloped. One of the principal reasons for these adverse relations in sources of income is certainly the unresolved question of the status and conditions of operation of foreign trade zones in the seaports, which have been put off for years.

The level of the reproductive capability of seaport work organizations (to-
for the grouping) was 3.7 percent in 1979, which represents a growth of 12 percent over the previous year. However, almost the entire business fund achieved in 1979 had to be committed in the form of repayable and non-repayable funds for self-managed special-interest communities at the republic level and for the underdeveloped regions, so that the seaports were left only depreciation as a source for new investments and for repayment of credit. This indicates that the reproductive capability of seaport activity is very low and it is becoming ever more urgent to solve the problem of sources from which investments in the seaport infrastructure. Seaport work organizations expect this issue to be favorably resolved during 1980.

Seaport work organizations had a net foreign exchange inflow of \$51 million in 1979, which is 21 percent more than in the previous year. Seaport activity represents one of the most favorable forms of foreign exchange inflow from invisibles, since the foreign exchange outflow is very small for this activity. If better advantage is to be taken of this favorable circumstance, the seaports ought to be afforded the possibility of developing their commercial function to a greater extent, which can be achieved most rapidly through the activity of foreign trade zones.

YUGOSLAVIA

RAILROAD TRACK SYSTEM, EQUIPMENT, 1975-1979

Belgrade TRANSPORT in Serbo-Croatian No 7, Jul 80 pp 41-42

[Excerpt] The length of standard-gauge track was 9,419 km in 1975 and 9,762 km in 1979. There were 790 km of double-track line in 1975 and 833 km in 1979; electrified track constituted 28 percent of total track length in 1975, and in 1979 it constituted 30 percent of the total network of our railroads.

The density of the network of lines of the Yugoslav Railroads varies greatly and comes out to 38 km of line per 1,000 square kilometers of the area of Yugoslavia. This varies quite widely from one republic or province to the other: from 24 km (Montenegro) to 80 km (Vojvodina). In a comparison with the European railroads, only six countries have a line density lower than the Yugoslav Railroads, while all the others have a considerably higher density, ranging from 39 to 131 km of line per 1,000 square kilometers of area. The condition of our lines is also very bad with 50 percent of the roadbed having been depreciated and the depreciation of track even 58 percent. This condition of track depreciation also results in limits on speeds, which range as follows on the standard-gauge network (which is 9,762 km long):

- i. we have 1,153 km, or 12 percent of the track, on which speeds exceeding 100 km/hr are allowed,
- ii. we have 3,220 km, or 34 percent, for speeds between 80 and 100 km/hr,
- iii. we have 5,389 km, or 54 percent, for a speed under 80 km/hr.

As we see, the condition of the track is such that the maximum permissible speeds are less than 80 km/hr on more than 50 percent of the entire track network of the Yugoslav Railroads.

As for traction, equipment is as follows on the basis of the share in traffic:

i. electric locomotives had a share of 10 percent in 1975 and 28 percent in 1979;

ii. diesel locomotives had a share of 33 percent in 1975, and their share then fell to 20 percent in 1979.

The share of the particular types of traction in total traffic seems to be still more favorable: for example, though electric locomotives have a 28-percent share in the total number of locomotives, their share in traffic is 54 percent; diesel locomotives had a share of 33 percent of the traffic in 1975 and 38 percent in 1979 [sic]; steam locomotives had a 14-percent share of traffic in 1975 and a share of only 7 percent in 1979.

One can clearly see from the above that the orientation has been toward electric traction in carrying out the modernization of the Yugoslav Railroads, that is, in implementing the agreement on their development.

As for progress in carrying out the social compact on development of the railroads with respect to passenger cars, in 1975 we had a fleet of 3,396 cars, and in 1979 that number had dropped to 3,162. Though the total number of passenger cars and also seats has dropped, the composition of the fleet has altered considerably in the period 1976-1979 thanks to the purchase of cars of more up-to-date design, rail buses and rail diesel and electric cars, which has made it possible to offer passengers better quality and more comfortable transportation service. Thus today there is an obvious improvement in the quality of passenger cars and the composition of the fleet, as can be seen from the following figures on the allowed speeds of the passenger cars:

Under 80 km/hr	1.64 percent of the fleet
Under 100 km/hr	45.00 percent of the fleet
Under 120 km/hr	12.00 percent of the fleet
Under 140 km/hr	19.00 percent of the fleet
Under 160 km/hr	about 22.00 percent of the fleet

Though a sizable purchase of cars has been made in this period, on the basis of the composition of the fleet and the comfort of the cars themselves, in 1979 our railroads had only 10 seats per 1,000 inhabitants, while in most of the European countries this index ranges from 14 to 40 seats.

As for the carrying capacity of the fleet of freight cars, today the Yugoslav Railroads have a carrying capacity of 1,823,062 tons. The growth rate of carrying capacity rose slightly between 1975 and 1979, while the number of cars was all of about 10 percent lower in 1979 than in 1975. The reason is that a sizable number of cars have been scrapped, and new and more modern cars with higher carrying capacity have been purchased. Thus today the fleet of freight cars shows the following pattern by year of construction:

i. 1944--19 percent,

- ii. between 1945 and 1970--39 percent,
- iii. between 1970 and 1975--30 percent, and
- iv. between 1976 and 1979--about 11 percent of the fleet.

Though considerable efforts have been made in this area, it is evident that about 19 percent of our freight car fleet is still about 40 years old or more, which is causing considerable difficulties in operation and to a great extent is jeopardizing the safety of traffic because they are technically worn out and in bad condition.

As for the volume of freight compared to the growth rate envisaged by the Social Compact on Development of the Yugoslav Railroads in the Period From 1976 to 1980, we can say that there is a lag in the volume of traffic in terms of net ton-kilometers, since the growth rate forecast in the period 1976 to 1979 was 6 percent, and the actual growth rate was 4.6 percent. Though the well-known social compacts have been adopted on transportation policy and on conditions of economic activity and development, their realization has not had a sufficient impact on progress in modernization or on participation of the Yugoslav Railroads and the country's transportation market.

Beginning with the base year 1975 the share of the various branches of transportation in passenger and freight traffic in the 1976-1979 period shows a further declining trend of the share of the railroads on our country's transportation market. That is, in 1979 the railroads carried only about 10 percent of the passengers and accounted for about 23 percent of the passenger-kilometers, and in freight operations the railroad carried 28 percent of the tonnage and accounted for 53 percent of the ton-kilometers of all the freight carried by common carriers in the socialized sector.

It therefore follows that in 1979 the railroads carried about 108 million passengers and about 88 million tons of freight, which is one-tenth of the passenger volume and slightly less than one-third of the freight volume of our country's land transportation.

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YUGOSLAVIA

BUS, TRUCKING CAPACITIES, 1978-1979

Belgrade TRANSPORT in Serbo-Croatian No 7, Jul 80 pp 45-47

[Article by Milan Obradovic]

[Excerpt] Organizations of associated labor operating as common carriers in highway transportation successfully perform the function of rendering transportation services to the economy and to society. According to figures for 1978, the industry had 655 organizations (100 bus firms, 412 truck firms, and 143 offering both passenger and freight services) and a labor force of 112,288.*

In 1979 all branches of transportation taken together carried a total of 1 billion passengers (precisely 1,068,126,000), which is 1 percent more than the previous year, 1978. As shown in Table 1 and as has been the case up to now, rail and highway transportation carried most of the traffic--together 1,054,643,000 passengers, which is 98 percent of the total volume. The 4-percent decline of the rail passenger volume and the 1-percent increase in the passenger volume in highway transportation brought about a further redistribution of the traffic to the advantage of highway transportation, so that the share of the railroad in the total volume dropped from 10.6 to 10.1 percent, and the share of highway transportation increased from 88.3 to 88.7 percent.

The situation is similar when the length of the trip is taken into account; the number of passenger-kilometers was up 1 percent for total traffic and also for highway passenger traffic and down 3 percent for rail passenger traffic.

It is evident from Table 2 that 332,026,000 tons of freight were carried, which is 8 percent more than in 1978. Both rail and highway transportation showed the same 9-percent increase, so that their relative proportions

* Data of the Federal Bureau of Statistics and of organizations which belong to the Highway Transportation Trade Community and complex organizations of associated labor were used in preparing this analysis of common carriers in highway transportation.

changed hardly at all as compared to 1978. The share in the volume of freight was 26.4 percent for rail transportation (26.2 percent in 1978) and 58.6 percent for the trucking industry (58 percent in 1978).

Table 1. Passenger Volume and Traffic

<u>Elements</u>	<u>1978</u>	<u>1979</u>	<u>Index</u>	<u>Structure, %</u>	
				<u>1978</u>	<u>1979</u>
Total volume of passengers, in thousands	1,060,001	1,066,126	101	100.0	100.0
Rail	112,780	108,049	96	10.6	10.1
River and lake	119	150	126	--	--
Maritime	6,713	8,056	120	0.6	0.7
Air	4,950	5,277	107	0.5	0.5
Bus	935,439	946,594	101	88.3	88.7
Passenger-kilometers, in millions	44,145	44,628	101	100.0	100.0
Rail	10,445	10,134	97	23.6	22.7
River and lake	19	26	137	0.1	0.1
Maritime	211	210	99	0.5	0.5
Air	4,730	5,236	111	10.7	11.7
Bus	28,740	29,022	101	65.2	65.0

Note: Figures of the monthly survey INDEKS (INDEX), No 3, 1980.

However, when the length of the haul is taken into account, the picture is somewhat different. Total traffic in ton-kilometers dropped 2 index points. The traffic in ton-kilometers showed a larger increase in rail transportation (index number 111) than in the trucking industry (4-percent increase), so that the share of the railroads in total traffic increased considerably (from 10.2 to 11.5 percent), which, since the two branches had the same increase in the volume of freight, indicates an increase in the average freight haul in rail transportation as compared to the average length of the freight haul in the trucking industry. This is also in line with the intentions of the Social Compact on the Transportation Policy of Yugoslavia, under which freight is to move to rail transportation over the longer distances to achieve optimality in the transportation system.

Table 2. Freight Volume and Traffic

<u>Elements</u>	<u>1978</u>	<u>1979</u>	<u>Index</u>	<u>Structure, %</u>	
				<u>1978</u>	<u>1979</u>
Total volume of freight, in thousands of tons	308,383	332,026	108	100.0	100.0
Rail	80,763	87,778	109	26.2	26.4
River and lake	26,492	26,230	99	8.6	7.9
Maritime	22,189	23,348	105	7.1	7.0

Table 2 (continued)

<u>Elements</u>	<u>1978</u>	<u>1979</u>	<u>Index</u>	<u>Structure, %</u>	
				<u>1978</u>	<u>1979</u>
Air	30	35	117	0.1	0.1
Truck	178,909	194,635	109	58.0	58.6
Freight traffic, in millions of ton-kilometers	228,717	223,997	98	100.0	100.0
Rail	23,378	25,925	111	10.2	11.5
River and lake	5,907	5,651	96	2.5	2.5
Maritime	182,505	174,763	96	79.7	78.0
Air	54	84	156	0.2	0.2
Truck	16,873	17,574	104	7.4	7.8

Note: Figures of the monthly survey INDEKS, No 3, 1980.

Capacity and Physical Volume of Passenger Transportation

Common carriers in the public sector of the bus industry, which had 11,253 buses with a passenger capacity of 594,656, carried, as shown in Table 3, more than a billion passengers (1,004,912,000), traveled 864,529 km, and had a traffic of 30,047,881,000 passenger-kilometers. These figures are all higher than in 1978: 5 percent higher for the number of buses and kilometers traveled, 6 percent for the passenger capacity and 4 percent for the number of passengers carried. However, the other elements are staying at the same level (kilometers traveled per vehicle) or are dropping--passengers carried per bus and passenger-kilometers per vehicle dropped 14 percent, and passengers carried per unit capacity and passenger-kilometers per unit capacity dropped 2 percent.

The average distance traveled per passenger remained unchanged at 30 km.

Table 3. Passenger Transportation Capacity and Traffic

<u>Elements</u>	<u>1978</u>	<u>1979</u>	<u>Index</u>
1. Number of buses	10,726	11,253	105
2. Passenger capacity	562,712	594,656	106
3. Kilometers traveled, in thousands	822,674	864,529	105
4. Passengers carried, in thousands	965,808	1,004,912	104
5. Passenger-kilometers, in thousands	29,019,986	30,047,881	103
6. Kilometers traveled per vehicle	76,699	76,826	100
7. Passengers carried per bus	90,043	89,302	99
8. Passengers carried per unit capacity	1,716	1,690	98
9. Passenger-kilometers per vehicle, in thousands	2,705	2,670	99
10. Passenger-kilometers per unit capacity	51,572	50,530	98

Table 3 (continued)

<u>Elements</u>	<u>1978</u>	<u>1979</u>	<u>Index</u>
11. Average distance traveled per passenger, passenger-kilometers/number of passengers	30	30	100

Capacity and Volume of Freight in the Trucking Industry

Common carriers in the public sector of the trucking industry, which had 24,874 vehicles and 7,725 trailers and a capacity of 405,920 registered tons carried 133,864,000 tons of freight in 1979, handled traffic of 15 billion ton-kilometers (15,198,698,000) and covered 1.5 billion kilometers (precisely 1,464,453,000).

These elements all increased, the increases ranging from 4 to 12 percent: the average number of trailers 4 percent, the volume of freight and freight traffic in ton-kilometers 7 percent, the number of vehicles 8 percent, vehicle capacity 11 percent and kilometers traveled 12 percent. Even the kilometers traveled per vehicle increased 3 percent.

The other elements in Table 4 showed decreases ranging from 1 to 4 percent: tons carried per vehicle and distance traveled per ton of freight (which was 113 km) dropped 1 percent, ton-kilometers per vehicle dropped 2 percent, tons carried per unit capacity dropped 3 percent and ton-kilometers per unit capacity dropped 4 percent.

Table 4. Capacity and Traffic in the Trucking Industry

<u>Elements</u>	<u>1978</u>	<u>1979</u>	<u>Index</u>
1. Average number of vehicles	22,967	24,874	108
2. Average number of trailers	7,418	7,725	104
3. Vehicle capacity	367,044	405,920	111
4. Kilometers traveled, in thousands	1,308,436	1,464,453	112
5. Tons of freight carried, in thousands	124,893	133,864	107
6. Freight traffic, in thousands of ton-kilometers	14,242,636	15,198,698	107
7. Kilometers traveled per vehicle	56,970	58,875	103
8. Tons carried per vehicle	5,438	5,382	99
9. Tons carried per unit capacity	340	330	97
10. Ton-kilometers per vehicle	620,135	611,027	98
11. Ton-kilometers per unit capacity	38,804	37,443	96
12. Average distance traveled per ton of freight	114	113	99

Capacity and Physical Volume of Transportation by Republics and Provinces

In Yugoslavia's passenger transportation organizations of associated labor had 11,253 buses distributed as follows among the republics and provinces: 1--Serbia with 4,430, 2--Serbia proper with 2,713, 3--Croatia with 2,174, 4--Slovenia with 1,790, 5--Bosnia-Hercegovina with 1,784, 6--Vojvodina with 1,137, 7--Macedonia with 794, 8--Kosovo with 580 and 9--Montenegro with 281. Whereas the number of buses dropped 3 percent in Montenegro, there were increases ranging from 1 to 10 percent in the other republics and provinces (Macedonia 1 percent, Croatia, Serbia proper and Vojvodina 3 percent, Serbia 4 percent, Slovenia 6 percent, Kosovo 9 percent and Bosnia-Hercegovina 10 percent).

The republics and provinces can be classed in three groups on the basis of the passenger volume carried with this fleet of buses.

In the first group are Montenegro and Serbia proper, where the volume was down 9 and 1 percent, respectively. In the second group is Croatia, where the passenger volume stayed the same at an index number of 100. The third group is the most numerous, in this group there was an increase in the volume ranging from 3 to 16 percent (Slovenia and Serbia 3 percent, Vojvodina 5 percent, Bosnia-Hercegovina 11 percent, Macedonia 13 percent and Kosovo 16 percent).

In Serbia proper there was a decline in the volume of passengers carried (1 percent) in spite of the 3-percent increase in the number of buses.

The 3-percent increase in the number of buses in Croatia did not increase the number of passengers carried. The 4-percent increase in the number of buses in Serbia and the 6-percent increase in Slovenia were not accompanied by a proportionate increase in the passenger volume, which increased 3 percent in both republics. However, the other republics and provinces showed a faster increase for the passenger volume than for the number of buses: 1 percent faster in Bosnia-Hercegovina, 2 percent faster in Vojvodina, 7 percent faster in Kosovo and 12 percent faster in Macedonia.

This shows at the same time the level of utilization of buses, which was as follows: a) lower in Montenegro, Serbia proper, Croatia, Slovenia and Serbia and b) higher in Macedonia, Kosovo, Vojvodina and Bosnia-Hercegovina.

Average distance traveled per passenger ranged from 21 to 46 km (21 in Slovenia and Vojvodina, 28 in Bosnia-Hercegovina, 29 in Serbia, 32 in Serbia proper, 35 in Kosovo, 42 in Croatia, 44 in Macedonia and 46 in Montenegro). Comparisons of 1979 with 1978 were as follows: a) decreases of 1 percent in Vojvodina, 2 percent in Croatia, 3 percent in Serbia and Serbia proper, and 8 percent in Kosovo, b) the same level in Bosnia-Hercegovina and Macedonia, and c) increases of 5 percent in Slovenia and 53 percent in Montenegro.

In Yugoslavia's trucking industry [common carriers in the public sector] the fleet numbered 24,784 vehicles, as follows: 1) Serbia 8,912, 2) Serbia proper 6,946, 3) Croatia 4,609, 4) Bosnia-Hercegovina 3,949, 5) Slovenia 3,597, 6) Macedonia 3,214, 7) Vojvodina 1,918, 8) Montenegro 593 and 9) Kosovo 48. Their increases over 1978 ranged from 2 to 26 percent: 2 percent in Kosovo, 3 percent in Serbia proper, 5 percent in Slovenia, 7 percent in Montenegro and Serbia, 8 percent in Bosnia-Hercegovina, 9 percent in Croatia, 14 percent in Macedonia and 26 percent in Vojvodina.

The number of trailers was 7,725: 1) Serbia 2,648, 2) Bosnia-Hercegovina 1,842, 3) Serbia proper 1,670, 4) Croatia 1,320, 5) Slovenia 1,001, 6) Vojvodina 972, 7) Macedonia 505, 8) Montenegro 409 and 9) Kosovo 6.

These vehicles increased their freight volume between 3 and 64 percent between 1978 and 1979: 3 percent in Montenegro, Croatia and Serbia, 8 percent in Slovenia, 10 percent in Bosnia-Hercegovina, 23 percent in Macedonia, 30 percent in Vojvodina, and 64 percent in Kosovo. The exception was Serbia proper, where the volume dropped 2 percent.

The volume of freight increased faster than the number of vehicles in the following republics and provinces: 2 percent in Bosnia-Hercegovina, 3 percent in Slovenia, 7 percent in Macedonia, 34 percent in Vojvodina and 62 percent in Kosovo. However, in the following republics and provinces the rate of increase of the volume of freight was slower than the rate of increase of the number of vehicles: 4 percent in Montenegro and Serbia, 5 percent in Serbia proper and 6 percent in Croatia.

In other words, the level of utilization of vehicles to carry freight rose in Bosnia-Hercegovina, Slovenia, Macedonia, Vojvodina and Kosovo and dropped in Montenegro, Serbia, Serbia proper and Croatia.

Freight traffic in ton-kilometers dropped in Serbia (3 percent) and Serbia proper (114), while it rose between 6 and 66 percent in the other republics and provinces (6 percent in Bosnia-Hercegovina, 7 percent in Slovenia, 9 percent in Croatia, 18 percent in Macedonia, 33 percent in Montenegro, 37 percent in Vojvodina and 66 percent in Kosovo).

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YUGOSLAVIA

URBAN TRANSPORTATION DATA, 1979

Belgrade TRANSPORT in Serbo-Croatian No 7, Jul 80 pp 49-50

[Excerpt] I. Volume of Services and Capacity

Passenger Volume

The 23 organizations of associated labor surveyed in municipal public passenger transportation carried 1,476.6 million passengers in 1979, which is an increase of 84.8 million passengers, or 6.8 percent, over 1978. The increase in the passenger volume is above all the result of restricted use of passenger cars (odd-even), the rising price of fuel, population growth in the cities, expansion of the network of public urban transportation routes and the cheaper system of fares. Among the major cities the largest increase in the passenger volume was recorded in Belgrade (10 percent), and a drop in the volume of passengers was recorded only in Titograd (4.0) and Zadar (10.3 percent).

An increase in the passenger volume of 4.7 percent was recorded over last year in streetcar transportation, the increase for bus transportation was 6.4 percent, while for trolley bus transportation it was 11.0 percent.

Table 1 shows the pattern of distribution of the passenger volume in a comparison with 1978.

Table 1

<u>Type of Transportation</u>	In millions		
	<u>1978</u>	<u>1979</u>	<u>Index</u>
Streetcar	288.6	302.3	104.7
Bus	1,092.1	1,162.0	106.4
Trolley bus	11.1	12.3	111.0

At the end of 1979 the number of vehicles totaled 4,724, which is 5.7 percent, or 258 vehicles, more than in 1978.

Though there was an increase in the total number of vehicles, we should emphasize that it is still not adequate to meet the needs of serving the public and to keep up with the rapid development of our cities. However, we should point out that the situation for purchasing vehicles is very unsatisfactory both with respect to the number of vehicles and also with respect to the price and delivery dates, which make it impossible for organizations of associated labor in urban public transportation to increase the volume and quality of their services and under the conditions of the energy crisis carry an ever larger volume of passengers turning to municipal transportation. In 1979 there was a constructive tendency toward a further increase in the use of tandem arrangements in streetcar and bus transportation. The number of tandem streetcars increased 34.8 percent over 1978, or 19 vehicles, while the number of tandem buses increased 55 vehicles, or 13 percent.

This helped organizations of associated labor in urban public transportation to improve their business operation over 1978, and it helped to achieve a relative reduction of operating costs (fuel consumption and the like) and more efficient business operation (reduced number of operators per vehicle, as shown in Table 2).

Table 2. Kilometers Traveled (in millions)

Type of Vehicle	1978	1979	Index
Streetcar	33.4	33.9	101.4
Bus	1.3	1.2	94.0
Trolley bus	395.4	402.4	101.7
Total	430.1	437.5	101.7

The vehicles of urban public transportation in the 23 cities surveyed traveled 437.5 million kilometers with passengers in 1979, which is 1.7 percent more than in 1978.

In 1978 there was a tendency in almost all organizations of associated labor for the number of kilometers traveled to increase more slowly than the passenger volume because of the greater employment in transportation of tandem vehicles with a higher passenger capacity.

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